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FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	VETERINARY MEDICINE		
DEPARTMENT	PARACLINICAL VETERINARY STUDIES		
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MODULE	INFECTIOUS DISEASES I		
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SECOND OPPORTUNITY EXAMINATION PAPER

Examiners: Examiners: Prof S Khaiseb, Prof C Ntahonshikira and Dr Leya Mwense
Internal Moderator: Dr. J Yabe
External Moderator: Prof. F Giovanni

This question paper consists of **eight (8)** pages including this front page.
Additional materials to be supplied: **None**

Instructions: *This question paper consists of Section A, B, C, and D. Answer all questions.*

Hand in this examination paper with your answer book

SECTION A: MULTIPLE CHOICE QUESTIONS. **[20 marks, 1 mark each]**

Choose the correct answer.

1. What is the characteristic morphology of *Erysipelothrix rhusiopathiae*?
   a) Gram-positive, club-shaped rod
   b) Gram-negative, fusiform rod
   c) Gram-positive, slender rod with a tendency to form long filaments
   d) Gram-negative coccobacillus

2. Which bacterial genus is described as Gram-negative, filamentous or spindle-shaped, and often associated with necrotic infections in animals?
   a) *Listeria*
   b) *Erysipelothrix*
   c) *Fusobacterium*
   d) *Corynebacterium*

3. *Corynebacterium* species are often described as having which unique microscopic arrangement? [1 mark]
   a) Chains of cocci
   b) "Chinese letter" or palisade arrangement
   c) Spiral forms with flagella
   d) Coccobacillary shape

4. What is the causative agent of paratuberculosis in animals?
   a) *Mycobacterium tuberculosis*
   b) *Mycobacterium avium* subspecies *paratuberculosis*
   c) *Brucella abortus*
   d) *Salmonella enterica*

5. What is the recommended treatment for mares infected with *Taylorella equigenitalis* causing Contagious Equine Metritis?
   a) Surgical removal of the uterus
   b) Antibiotic treatment and genital tract lavage
   c) Hormonal therapy
   d) No treatment is required

6. How can proper nutrition help prevent Postweaning Diarrhea in piglets?
   a) By ensuring a smooth transition from milk to solid food to support gut health
   b) By increasing the energy intake during weaning
   c) By reducing the protein intake during weaning
   d) By introducing high-fat diets immediately after weaning

7. Among the following bacteria which one is responsible for coliform mastitis in cattle, pneumonia in calves and foals, endometritis in mares and urinary tract infections in dogs?
   a) *Bordetella pertussis*
   b) *Vibrio cholerae*
   c) *Brucella suis*
   d) *Klebsiella pneumoniae*

8. *Actinomyces bovis* is
   a) Characterized by rarefying periostitis and formation of bony cavities filled with pus
   b) Clubs and mycelium stain Gram negative and Gram positive respectively
   c) Grown under anaerobic conditions
   d) All the above

9. What is *Mycobacterium bovis* primarily responsible for in cattle?
   a) Tuberculosis
   b) Brucellosis
   c) Anthrax
   d) Foot-and-mouth disease

10. What is a common clinical sign of paratuberculosis in infected animals?
   a) Sudden weight gain
   b) Persistent diarrhea
   c) Loss of appetite
   d) Swollen lymph nodes

11. How is *Mycobacterium avium* subspecies *paratuberculosis* primarily transmitted in animals?
   a) Airborne droplets
   b) Fecal-oral route
   c) Direct skin contact
   d) Through sexual transmission

12. Which of the following is a common clinical sign of *Bordetella bronchiseptica* infection in dogs?
   a) Severe diarrhea
   b) High fever and vomiting
   c) Coughing, nasal discharges, and sneezing
   d) Paralysis

14. Quantitative ability of an organism to cause disease is .....
    a) Virulence
    b) Pathogenicity
    c) Invasiveness
    d) Adhesiveness

15. ..... Test is used to distinguish pathogenic Staphylococci.
    a) Catalase test
    b) Coagulase test
    c) CAMP test
    d) MUG test

16. What is the primary causative agent of atrophic rhinitis in swine?
    a) *Mycoplasma hyopneumonia*
    b) *Bordetella bronchiseptica*
    c) *Escherichia coli*
    d) *Actinobacillus pleuropneumonia*

17. What is a potential complication of bovine keratoconjunctivitis if left untreated?
    a) Ocular rupture
    b) Permanent blindness
    c) Systemic infection
    d) Mastitis

18. What is the primary clinical condition caused by *Klebsiella pneumoniae* in cattle?
    a) Mastitis
    b) Pneumonia
    c) Diarrhea
    d) Bovine keratoconjunctivitis

19. Which of the following *Salmonella* serovars is non-host adapted?
    a) S. typhi
    b) S. pullorum
    c) S. choleraesuis
    d) S. typhimurium

20. Which of the following is a key method for controlling the spread of atrophic rhinitis in pig herds?
    a) Isolation of infected animals
    b) Ensuring proper hygiene and sanitation
    c) Regular vaccination
    d) All of the above

SECTION B: TRUE/FALSE AND FILL IN QUESTIONS **[20 MARKS]**

Question 1. Indicate whether the statement is true or false. [10]

1. In cattle, dermatophytosis caused by *Trichophyton verrucosum* is a self-limiting disease, but vaccination is ineffective in controlling outbreaks in herd settings.
2. *Nocardia* infections in animals are often misdiagnosed due to their ability to mimic both fungal and mycobacterial infections in histopathological samples.
3. Aspergillosis in birds primarily affects the respiratory system, but systemic dissemination is rare due to the strong innate immune response in avian species.
4. *Dermatophilus congolensis* uses flagella for motility, allowing it to spread across wet skin surfaces and establish infection.
5. The primary method for diagnosing *Mycobacterium bovis* infection in cattle is the tuberculin skin test.
6. Paratuberculosis primarily affects poultry and is not a concern for cattle.
7. Tick pyaemia in 2- 4-week-old lambs is caused by *Staphylococcus aureus*.
8. *Leptospira* species are metabolically/biochemically active as they have a weak cell wall.
9. Mcfadeyan reaction is useful to demonstrate anthrax spores.
10. Using probiotics in the feed as one of the management practices can help reduce the incidence of Postweaning Diarrhea in pigs?

Question 2. Fill in the blanks **[10]**

a. Diseases that damage the intestinal mucosa, such as coccidiosis, ..., ... or ascariasis can increase susceptibility to ..... by promoting the overgrowth of clostridium perfringens. [3]

b. ....., and *Moraxella bovoculi* (*M. bovovuli*) all may enhance the risk for infection, as well as increase ocular and nasal discharge that may facilitate the shedding of ..... [2]

c. *Salmonella* spp. Is mainly transmitted by ..... can also be transmitted ..... in mammals [2]

d. In the clinic, veterinarians use ..... to visualize fungal elements on the animal body. [1]

e. *Pseudomonas aeruginosa* causes ..... in sheep. [1]

f. With regard to fungal infections only ..... are significantly affected by Coccidioidomycosis. [1]

SECTION C: SHORT ANSWER QUESTIONS. **[40 marks]**

Question 1:
Define laryngeal Necrobacillosis and mention the causative agent and host species [3]

Question 2:
Describe the pathogenesis of an infection caused by Corynebacterium pseudotuberculosis after infection through superficial wounds [4]

Question 3:
List three morphological characteristics of campylobacter species [3]

Question 4:
Name three practical methods that can be used to collect ringworm samples [3]

Question 5:
In terms of transmission where is *Cryptococcus neoformans* var. *neoformans* found? What is the name of the other subspecies found in the bark and plant debris under eucalyptus trees? [3]

Question 6.
What diseases can *Mycobacterium avium* cause in animals? [2]

Question 7. . **[6]**

a. Which animals are most commonly affected by enteric colibacillosis? [4]
b. How is enteric colibacillosis primarily transmitted? [2]

Question 8.
Equine strangles is a zoonotic disease. Name four (4) different forms of the disease that may occur in humans. [4]

Question 9.
Name the causative agent of glanders in horses and give the methods used to diagnose this disease. [4]

Question 10.
Name three conditions caused by *Aspergillus* spp. in poultry [3]

Question 11.
How is Salmonella transmitted in animals? Name two transmission routes. [2]

Question 12.
What environmental factors increase the risk of bovine keratoconjunctivitis? Name 3 environmental factors. [3]

SECTION D: STRUCTURED QUESTIONS **[70 marks]**

Question 1. **[13]**

a) Explain the primary clinical signs of Pasteurellosis in cattle. [5]

b) Discuss the diagnostic methods used to identify Pasteurellosis in cattle. [8]

Question 2. [12]

1. Describe the typical clinical signs of Pleuropneumonia in pigs. [7]
2. What are the prevention strategies for Pleuropneumonia in pigs? [5]

Question 3. [10]
Discuss the common infections of veterinary importance caused by Klebsiella Species.

Question 4.
Name five (5) types of samples that might be collected for the diagnosis of leptospirosis and for which test. [5]

Question 5.
Give the factors that affect the severity of mycotoxicosis in animals.
[5]

Question 6. [5]
Name five (5) differential diagnosis of *Actinobacillus seminis* that causes Epididymitis in rams.

Question 7. [10]
List 5 types of toxins that *Clostridium perfringens* produces and list additional 5 diseases these toxins cause. [10]

Question 8. [10]

Case study: A 3-year-old Boer goat from a small farm presents with a firm, non-painful swelling in the submandibular region. The farmer reports that the swelling has been slowly enlarging over the past 2 months. The goat is otherwise healthy, with normal appetite and behaviour. On physical examination, the swelling is approximately 5cm in diameter, immobile, and has thickened overlying skin. No discharge or ulceration is noted. Fine needle aspiration of mass yields thick, somewhat greenish pus-like cheese.

a) What is the most likely diagnosis for the goat's condition? [1]

b) Identify the etiological agent responsible for the condition and describe its 5 morphological characteristics. [6]

c) List two clinical manifestations of the condition in **a)**? [2]

d) Propose **one** effective control plan for this farmer? [1]

END OF PAPER